

In the Claims:

1. (Currently Amended) A method for selecting a channel for communication between two wireless devices, comprising:

synchronizing a wireless modem with a wireless hub on a downstream channel of a plurality of downstream channels by synchronizing the symbol timing, forward error correction framing, and recognition of a synchronization message at the wireless modem, the downstream channel of the plurality of downstream channels being transmitted from the wireless hub to a plurality of wireless modems including the wireless modem;

receiving at the wireless modem on the downstream channel a message comprising information regarding parameters for communicating over each of the plurality of downstream channels;

determining a selected downstream channel of the plurality of downstream channels for communication with the wireless hub; and

resynchronizing the wireless modem with the wireless hub on the selected downstream channel of the plurality of downstream channels.

2. (Previously Amended) The method of Claim 1, further comprising:

receiving at the wireless modem on the selected downstream channel a priority message comprising information regarding priority levels for each of a plurality of upstream channels associated with the selected downstream channel;

determining a selected upstream channel of the plurality of upstream channels for communication with the wireless hub based upon the priority levels for each of the plurality of upstream channels; and

resynchronizing the wireless modem with the wireless hub on the selected upstream channel of the plurality of upstream channels.

3. (Previously Amended) The method of Claim 2 wherein the message comprising information regarding the parameters comprises an instruction that instructs the wireless modem to synchronize on the selected upstream channel.

4. (Previously Amended) The method of Claim 1 wherein the message comprising information regarding the parameters for communicating over each of the plurality of downstream channels comprises priority level information for each of a plurality of upstream channels, the step of determining the selected downstream channel of the plurality of downstream channels for communication with the wireless hub comprising selecting the selected downstream_channel based upon the priority level information.

5. (Previously Amended) The method of Claim 1 further comprising a step of receiving at the wireless modem on the downstream channel another message comprising information regarding parameters for communicating over each of a plurality of other downstream channels, wherein the step of determining the selected downstream channel comprises selecting the selected downstream channel from the plurality of downstream channels and the plurality of other downstream channels, and wherein the plurality of

downstream channels and the plurality of other downstream channels correspond to different sectors of the wireless hub.

6. (Currently Amended) A method for selecting a channel for communication between two wireless devices, comprising:

receiving at a wireless modem on a downstream channel a message from a wireless hub comprising information regarding parameters for communicating over each of a plurality of upstream channels, the wireless modem already being synchronized with the ~~downstream~~ upstream channel;

determining a selected upstream channel of the plurality of upstream channels for communication with ~~the~~ [[a]] wireless hub; and

communicating from the wireless modem to the wireless hub on the selected upstream channel of the plurality of upstream channels.

7. (Previously Amended) The method of Claim 6 wherein the message comprising information regarding the parameters comprises an instruction that instructs the wireless modem to communicate on the selected upstream channel.

8. (Currently Amended) A method for communicating between two wireless devices in a communication system, comprising:

receiving at a first wireless device on a downstream channel a message from a second wireless device comprising information regarding parameters for communicating over each of a plurality of downstream channels, the first wireless device already being synchronized with the downstream channel;

synchronizing the first wireless device on a selected downstream channel of the plurality of downstream channels for receiving communication from ~~[[a]]~~ the second wireless device; and

receiving communication from the second wireless device to the first wireless device on the selected upstream channel of the plurality of upstream channels.

9. (Previously Amended) The method of Claim 8 wherein the message comprising information regarding parameters comprises an instruction that instructs the first wireless device to synchronize on the selected downstream channel.

10. (Cancelled)

11. (Original) The method of Claim 8 wherein the downstream channel is a control channel not being one of the plurality of downstream channels.

12. (Original) The method of Claim 8 wherein the downstream channel is one of the plurality of downstream channels and the first wireless device communicating with the downstream channel immediately after initialization.

13. (Original) The method of Claim 12 wherein the downstream channel has a lowest information rate of the plurality of downstream channels.

14. (Currently Amended) The method of Claim 8, further comprising:

receiving at the first wireless device on the selected downstream channel a message comprising information regarding priority levels for each of [[a]] the plurality of upstream channels associated with the ~~first~~ second wireless device;

determining a selected upstream channel of the plurality of upstream channels for communication with the second wireless device based upon the priority levels for each of the plurality of upstream channels; and

re-synchronizing the first wireless device with the second wireless device on the selected upstream channel of the plurality of ~~downstream~~ upstream channels.

15. (Previously Amended) The method of Claim 14 wherein the message comprising information regarding the priority levels for each of the plurality of upstream channels comprises an instruction that instructs the first wireless device to synchronize on the selected upstream channel.

16. (Previously Amended) The method of Claim 8 further comprising a step of receiving at the first wireless device on the downstream channel another message comprising information regarding parameters for communicating over each of a plurality of other downstream channels, wherein the step of synchronizing the first wireless device on the selected downstream channel comprises selecting the selected downstream channel from the plurality of downstream channels and the plurality of other downstream channels, and wherein the plurality of downstream channels and the plurality of other downstream channels correspond to different sectors of the second wireless device.

17. (Previously Amended) A wireless communication system, comprising:

a wireless hub configured to send downstream communications on at least one of a set of predefined downstream channels and receive upstream communications on at least one of a set of predefined upstream channels;

at least one wireless modem configured to receive said downstream communications, and send said upstream communications;

wherein said wireless modem comprises,

an acquisition unit configured to acquire a predefined downstream channel transmitted by said wireless hub and read Downstream Channel Descriptor (DCD) messages describing available downstream channels,

a scanning unit configured to scan the available downstream channels, and

a selection unit configured to select a best available downstream channel.

18. (Previously Amended) The system according to Claim 17, wherein said wireless modem further comprises a channel quality unit configured to build a list of the available downstream channels indicating a quality of reception on each downstream channel.

19. (Original) The system according to Claim 17, further comprising:

a channel change unit having,

a frame error rate indicator configured to identify when a frame error rate of a current downstream channel is unacceptable, and

a re-locking mechanism configured to acquire a new downstream channel.

20. (Previously Amended) The system according to Claim 19, wherein:

said re-locking mechanism performs a re-locking method, comprising the steps of,

scanning downstream channels transmitted DCD messages from said wireless hub in an order based on priority and attempting to lock onto the downstream channels scanned;
re-scanning each of said downstream channels if none was locked onto;
selecting a channel based on an alternate criteria if none of said scanning and re-scanning steps resulted in a channel lock, and attempting to lock onto the selected channel;
and
re-initializing all channel information and re-starting channel acquisition if said selecting step did not result in the channel lock.

21. (Currently Amended) The system according to Claim 20, wherein said alternate criteria is a $[[[]]\text{MPEG}[[[]]]$ frame error rate.

22. (Previously Amended) A communication device, comprising:
a hub configured to send downstream communications on at least one of a set of predefined downstream channels and receive upstream communications on at least one of a set of predefined upstream channels;

wherein:

said hub includes a Downstream Channel Descriptor (DCD) message generator that constructs at least one DCD message sent on said downstream channels; and

said at least one DCD message defines all downstream channels utilized by said hub.

23. (Previously Amended) A modem unit for use in a communication system, comprising:

a reception unit configured to receive downstream communications on a current downstream channel; and

a downstream channel selection unit configured to read Downstream Channel Descriptor (DCD) messages received by said reception unit and select a best available channel as said current downstream channel from priorities contained in said DCD messages.

24. (Previously Amended) The modem unit according to Claim 23, further comprising:

a transmission unit configured to transmit data from the modem unit on a current upstream channel; and

an upstream channel selection unit configured to select the current upstream channel based on priorities of upstream channels described in an Upstream Channel Descriptor (UCD) message received by said reception unit.

25. (Currently Amended) The modem unit according to Claim 24, wherein said upstream channel selection unit and said downstream channel selection unit include a change channel mechanism configured to change either the current upstream channel or the current downstream channel based on the priorities contained in the respective DCD and UCD messages.

26. (Previously Amended) The modem unit according to Claim 25, wherein said upstream channel selection unit and said downstream channel selection unit use different priorities for selecting channels for initial communications and for changing the current upstream or downstream channel.

27. (Previously Amended) The modem unit according to Claim 23, wherein said modem unit is pre-configured to use a particular cell or sector of a wireless hub to acquire and receive said downstream communications.

28. (Currently Amended) The modem unit according to Claim 24, wherein said downstream channel selection unit selects the current downstream channel of a sector based on a highest amount of power of available channels, and said upstream channel selection unit selects the current upstream channel based on a same sector of the selected ~~downstream- best~~ available channel.